

REMARKS

Favorable reconsideration of this application is respectfully requested.

Claims 10-13 are pending in this application. Claims 10 and 11 were rejected under 35 U.S.C. § 112, first paragraph. Claims 10 and 11 were rejected under 35 U.S.C. § 112, second paragraph. Claim 12 was rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. patent no. 5,702,986 to Mathews et al. (herein "Mathews") in view of U.S. patent 5,656,519 to Mogami. Claim 13 was rejected under 35 U.S.C. § 103(a) as unpatentable over Mathews in view of Mogami and further in view of U.S. patent 5,554,566 to Lur et al. (herein "Lur").

Addressing first the rejection of Claims 10 and 11 under 35 U.S.C. § 112, first and second paragraphs, those rejections are traversed by the present response.

Claims 10 and 11 are amended by the present response to clarify the features recited therein to address the rejections under 35 U.S.C. § 112 noted in paragraphs 1 and 2 of the outstanding Office Action.

First, claim 10 now clarifies the features recited therein, and claim 10 corresponds to the structure clearly shown in Figure 29 of the present application, as a non-limiting example.

The presently-submitted amendments to claims 10 and 11 are believed to address the rejections of those claims under 35 U.S.C. § 112, first and second paragraphs. Thus, claims 10 and 11 are believed to be in condition for allowance.

Addressing now the rejection of claim 12 under 35 U.S.C. § 103(a) as unpatentable over Mathews in view of Mogami, and the further rejection of Claim 13 further in view of Lur, those rejections are traversed by the present response.

As argued in the previous response, applicants respectfully submit that there is no incentive or motivation to one of ordinary skill in the art to modify Mathews in view of Mogami to meet the claim limitations. The basis for maintaining the outstanding rejection states:

It is noted that, one of ordinary skill in the art can form the silicide on the surface of source/drain regions [at] the same time as forming the silicide layer on the gate as taught by Mogami or can form the silicide layer on source/drain regions after forming the gate electrode structure because the method limitations how to form the device are not considered as patentability limitations in the device application and one of ordinary skill in the art can use any method to incorporate the silicide layer as taught by Mogami on Mathews et al.'s source/drain regions.¹

The above-noted grounds for rejection is believed to be improper and is traversed for the following reasons. Applicants' previous arguments as to why one of ordinary skill in the art would not modify Mathews in view of Mogami as suggested in the previous Office Action to meet the claim limitations is not directed to method limitations. Instead, what applicants argued is that when combining the teachings of Mathews and Mogami one must look at the methods they disclose therein to achieve the claimed structures. In other words, if one of ordinary skill in the art was to modify the teachings of Mathews in view of the teachings of Mogami with respect to forming source/drain regions, one of ordinary skill in the art would have to evaluate the process disclosed in Mogami of forming the source/drain regions, and evaluate whether that process could be employed in Mathews, and further evaluate what kind of structure would result from employing the process of forming source/drain regions as in Mogami in the device of Mathews.

Stated another way, the structures in both Mathews and Mogami are not created in a vacuum of the processes disclosed in those references. Instead, the structures disclosed in Mathews and Mogami result from the specific process operations to generate the structures. To ignore the specific process operations disclosed in Mathews and Mogami is improper.

It is also noted that the above-noted statement indicating that one of ordinary skill in the art can form the silicide layer as taught by Mogami or alternately "after forming the gate

¹ Office Action of May 2, 2003, page 5, prenumbered paragraph 5.

electrode structure because the method limitations how to form the device are not considered as patentability limitations" is improper. If the outstanding Office Action is relying upon different teachings than those in Mogami, then further art must be cited to provide those different teachings. That is, it is improper to state that one of ordinary skill in the art could form source/drain regions in a way other than taught by Mogami because the outstanding rejection is only based on the combination of teachings of Mathews in view of Mogami.

The teachings in the actual applied art cannot simply be ignored. If other teachings of forming a silicide layer on source/drain regions after forming a gate electrode structure are known, then those other teachings must be utilized in combination with the teachings of Mathews. However, it is improper to utilize the teachings of Mogami in combination with the teachings of Mathews and then indicate that alternate teachings than in Mogami are also possible when no prior art has been cited directed to those alternate teachings.

In view of the above-noted comments, it is further noted that the outstanding Office Action recognizes the deficiencies in Mathews in that the outstanding Office Action states "Mathews et al. does not teach that source/drain regions have a silicified surface".² The outstanding rejection relies on the teachings in Mogami to meet such limitations, and does not cite any other teachings of forming a silicide layer on source/drain regions after forming a gate electrode structure. Absent citation of such alternate teachings to the actual teachings of Mogami, only the teachings in Mogami can be evaluated as to how such teachings in Mogami could have been combined with the teachings in Mathews. However, it is respectfully submitted that no teachings in Mogami can overcome the deficiencies in Mathews.

To overcome the recognized deficiencies in Mathews the outstanding Office Action cites the teachings in Mogami, and in particular Mogami disclosing source/drain regions 10,

² Office Action of May 2, 2003, page 3, line 23.

11 having silicified surfaces 13b in Figure 5F. However, it is respectfully submitted that such teachings in Mogami are not properly applicable to the teachings in Mathews.

In Mathews the surface of the polycrystalline silicon layer 11 which is to become a gate electrode is silicified to provide layer 12 *before* doping source/drain impurities. As a result, in Mathews there can be clearly no incentive or motivation to silicify the surface of source/drain regions 44, in contrast to the claims.

Further, as discussed in the present specification, for example with respect to Figure 42 and at page 26, line 5 et seq. as an example, the silicide films 56 are formed on surfaces of both the gate electrode 5 and the high-concentration source/drains 8; i.e. that operation as shown in Figure 42 takes place in the same step.

As Mathews does not even disclose or suggest forming the source/drain regions 44 prior to forming the layer 12 on the silicon layer 11, Mathews clearly cannot teach or suggest silicifying such source/drain regions 44.

Stated another way, if it was at all desirable to silicify the source/drain regions 44 in the device of Mathews, then Mathews at the very least would have to form those source/drain regions 44 prior to the forming the layer 12, i.e. Mathews would have to dope the regions to form the source/drain areas 44 prior to the silicifying step. Mathews fails to teach or suggest such an operation. Thereby, one of ordinary skill in the art would not modify Mathews to form an additional silicifying step after already providing the layer 12.

Moreover, Mogami does not teach or suggest a step in which a silicon layer, such as layer 11 in Mathews, would be silicified at a different time than source/drain regions. Thereby, the teachings in Mogami are not properly applicable to the teachings in Mathews.

In such ways, no combination of teachings of Mathews in view of Mogami renders obvious Claims 12 and 13 as currently written. Moreover, no teachings in Lur can overcome the above-noted deficiencies of Mathews in view of Mogami.

As no other issues are pending in this application, it is respectfully submitted that the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

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